

SUBJECT INDEX

A

Ablcuprein enzymatic activity of, 270
Acetaminophen toxicity selenium deficiency and, 64
2-Acetylaminofluorene metabolism selenium deficiency and, 65-66
Acetylcarnitine carnitine uptake and, 238 spermatozoa motility and, 241
Acidosis protein restriction and, 142-43 renal failure and, 130
Acrodermatitis enteropathica zinc malabsorption and, 279-80
ACTH placental secretion of, 109-10
Acylcarnitine formation of, 234-35
Acylcholesterol acyl transferase plant sterol absorption and, 76
Adenylyl cyclase cholera toxin and, 297
ADP-ribosylation pyridine nucleotide fission and, 297-98
ADP-ribosyl transferase isoprenol and, 298
Adrenal cortex protein-calorie malnutrition and, 199
Adriamycin cardiomyopathy carnitine and, 245-46
Aflatoxin B₁ selenium deficiency and, 64
Africa endemic goiter in, 364-67
Alanine placental transport of, 103
Albumin copper transport and, 267-68 zinc efflux and, 275 zinc transport and, 268-69
Alcohol dehydrogenase zinc deficiency and, 271
Aldolase zinc deficiency and, 271
Alkaline phosphatase zinc deficiency and, 271
Aluminum dialysis dementia and, 140
Amino acid catabolism carnitine and, 242-43

Amino acid metabolism pregnancy and, 111
Amino acids biological tracer studies of, 321-22
copper absorption and, 262 dialysis and, 131-33 physical injury and, 442-45 placental transport of, 101-3 sulfur selenium absorption and, 220
trace mineral utilization and, 214 zinc absorption and, 221
Aminobutyric acid carnitine uptake in brain and, 238-39
Aminopyrine N-demethylation selenium deficiency and, 59
Ammonia renal failure and, 129
Androstenedione fetal production of, 109
Anencephaly megavitamin A therapy during pregnancy and, 42
Aniline hydroxylation selenium deficiency and, 59
Anorexia nervosa dopaminergic activity in brain and, 197
growth hormone levels and, 189
plasma somatomedin activity and, 191
thyroid hormone metabolism and, 192-93
thyroid-stimulating hormone levels and, 192
Antibiotics goitrogenic effect of, 389-90
Antidiuretic hormone protein-calorie malnutrition and, 200
Apoceruloplasmin Wilson's disease and, 278
Apolipoprotein B dietary cholesterol and, 85
Aroclor 1254 goitrogenic effect of, 387
Ascorbate carnitine synthesis and, 236
Ascorbic acid copper absorption and, 263 nonheme iron bioavailability and, 224

placental transport of, 104-5
trace mineral utilization and, 214
Aspartate synthesis of quinolinate and, 292
Aspartic acid placental transport of, 103
Asthma
Maimonides's diet therapy for, 14-31
Atherosclerosis chylomicron cholesterol and, 77-78
high-density lipoproteins and, 90
niacin and, 299-300
pathogenesis of cholesterol and, 71
very-low-density lipoproteins and, 84
Azotemia nondietary control of, 138-39
renal failure and, 130-31

B

Bacteriostatics goitrogenic effect of, 389
Becker dystrophy carnitine deficiency and, 244
Bile acids cholesterol absorption and, 72 dietary cholesterol and, 79
Biliary cholesterol, 81-82 absorption of, 73
Bioflavonoids copper transport and, 268
Biogenic amines ceruloplasmin and, 270
Biological tracer studies instrumentation and, 311-16
Body composition protein loss and, 434-36
Body nitrogen biological tracer studies of, 324-25
Body water biological tracer studies of, 323-24
Bone formation zinc metalloenzymes and, 271
Breast milk
acrodermatitis enteropathica and, 279
carnitine bioavailability in, 249

zinc bioavailability in, 265-66
Brush border membrane
 copper transport across, 262
 zinc transport across, 264
Burn patients
 plasma amino acids in, 443
 tissue carnitine concentrations in, 241
Butanol-extractable iodine
 cretinism and, 362
 γ -Butyrobetaine
 carnitine synthesis and, 235-37
 carnitine uptake and, 238
Butyryl coenzyme A dehydrogenase
 copper and, 270
B vitamins
 absorption of, 290-92

C

Cabbage
 goitrogenic effect of, 383-84
Cadmium
 metallothionein induction and, 272
Calcium
 placental transport of, 106
Calcium absorption
 renal failure and, 140-41
Canada
 goiter prevalence in, 391
Cancer
 diet cures for, 42
Carbohydrate
 glucose kinetics of, 319-20
Carbohydrate intolerance
 renal failure and, 130
 uremia and, 136
Carbohydrate metabolism
 zinc and, 273
Carbonic anhydrase
 zinc deficiency and, 271
 zinc transport and, 268
Carboxypeptidase A activity
 zinc deficiency and, 271
Carcinogenesis
 herbal therapy and, 42-43
 selenium deficiency and, 65-66
Cardiac disease
 carnitine and, 244-46
Cardiomyopathy
 adriamycin
 carnitine and, 245-46
 selenium deficiency and, 66
Carnitine, 233-51
 abnormal metabolism and, 244-48
 biosynthesis and transport of, 235-42
 functions in normal metabolism, 242-44
 as nutrient, 248-50
Carnitine deficiency
 hyperlipidemia and, 137
Cassava
 goitrogenic effect of, 381-82
Catecholamines
 injury and sepsis and, 441
 protein-calorie malnutrition and, 199
Cell-mediated immunity
 zinc metalloenzymes and, 271
Ceruloplasmin
 copper incorporation into, 276
 copper transport and, 267-68
 enzymatic activity of, 270
Chiropractors
 food faddism promotion and, 47
Chloride ions
 placental transport of, 107
Cholelithiasis
 dietary cholesterol and, 81-82
 pathogenesis of
 cholesterol and, 71
Cholera toxin
 adenylate cyclase regulation and, 297
Cholesterol, 71-92
 absorption of, 72-76
 biliary, 81-82
 biological tracer studies of, 320-21
 chylomicrons and, 76-78
 hepatic metabolism of, 78-81
 low-density lipoproteins and, 84-87
 reverse transport of
 high-density lipoproteins and, 87-91
 very-low-density lipoproteins and, 82-84
 see also Biliary cholesterol, Serum cholesterol
Choline deficiency
 tissue carnitine concentrations and, 239
Chorionic gonadotropin
 placental secretion of, 109-10
Chromium
 bioavailability of, 214-15
 placental transport of, 108
Chylomicrons
 cholesterol absorption and, 76-78
Cirrhosis
 carnitine and, 246
 growth hormone levels and, 191
 plasma amino acids in, 443

Citrate
 zinc absorption and, 265
Citric acid
 acrodermatitis enteropathica and, 280
Clofibrate
 tissue carnitine concentrations and, 247
Colon cancer
 dietary cholesterol and, 76
Congenital heart disease
 cyanotic
 glucose homeostasis and, 320

Copper
 absorption of, 262-64
 bioavailability of, 215-18
 incorporation into ceruloplasmin, 276
 metallothionein induction and, 272
 transport of, 267-68
 uptake and efflux of, 276-77

Copper metabolism
 diseases of, 277-80
Copper metalloenzymes, 269-70
Coprostanol
 colon cancer and, 76

Coprostanone
 colon cancer and, 76

Creatine
 renal failure and, 129

Creatinine
 renal failure and, 129

Cretinism
 endemic goiter and, 342, 346-47, 350, 377-80

Creutzfeldt-Jakob disease
 pyridine nucleotide-requiring enzymes and, 302

Cycloheximide
 carnitine uptake and, 237

Cystamine
 carnitine uptake and, 238

Cysteine
 zinc absorption and, 265

Cystic fibrosis
 plasma somatotropin activity and, 191

Cytochrome P-450
 selenium and, 58-60

D

DDE
 goitrogenic effect of, 389

DTT
 goitrogenic effect of, 389

Deaf mutism
 endemic goiter and, 350

Dehydroascorbic acid
 placental transport of, 104

Dehydroepiandrosterone
fetal production of, 109

Desferrioxamine
osteomalacia in dialysis patients and, 140

Diabetes
glucose substrate oxidation and, 317
tissue carnitine concentrations and, 248

Dialysis
amino acid requirements and, 131-33
malnutrition and, 126, 138
protein requirements and, 130-31
serum carnitine concentrations and, 247-48
see also Hemodialysis

Dialysis dementia
aluminum accumulation in brain and, 140

Diamine oxidase
enzymatic activity of, 270

Dieldrin
goitrogenic effect of, 389

Diet
carnitine in, 249
ischemic heart disease and, 165-68
serum cholesterol and, 159-65

Diet therapy
ischemic heart disease and, 168-76

Diffuse goiter
iodine content of thyroid in, 393

Dihydrofolate reductase activity
placental, 105

Dihydroxyacetone phosphate
synthesis of quinolinolate and, 292

Diodoquin
acrodermatitis enteropathica and, 279

Diphtheria toxin
carnitine uptake and, 237-38
protein synthesis in HeLa cells and, 297

Diquat
selenium deficiency and, 64-65

Disodium EDTA
iron absorption and, 225

Divalent ion metabolism
abnormalities of
chronic renal failure and, 139-42

Duchenne muscular dystrophy
carnitine deficiency and, 244
glucose homeostasis and, 320

Dwarfism
zinc deficiency and, 220

E

Eastern Mediterranean
endemic goiter in, 358-59

Ecuador
endemic goiter in, 358

EDTA
zinc absorption and, 264-65

Elongation factor-2
protein synthesis and, 297

Emotional deprivation dwarfism
growth hormone levels and, 189

Endemic goiter, 341-425
causation of, 369-98
complications of, 377-80
etiology of, 371-73
prevention of, 398-405
public health aspects of, 342-69

Energy expenditure
biological tracer studies of, 323-24
nitrogen excretion and, 436-37

Enteral alimentation
renal failure and, 137-38

Enteral diets
carnitine in, 249-50

Enzymes
glutathione-dependent
selenium and, 54-57

Epinephrine
copper incorporation into ceruloplasmin and, 276

Erythrocytes
diffusion of niacin into, 293

Ethylene bisdithiocarbamates
goitrogenic effect of, 389

Ethylenediamine dihydroiodide
metabolism of, 396

N-Ethylmaleimide
carnitine uptake and, 238

Ethylmorphine demethylase
selenium deficiency and, 58

Exercise
glucose substrate oxidation and, 317
whole body protein turnover and, 447-48

F

Familial hypercholesterolemia
see Hypercholesterolemia

Fat metabolism
renal failure and, 136-37

Fatty acids
biological tracer studies of, 320-21
cholesterol absorption and, 72
transport of
carnitine and, 233-34
placental, 103-4

Fetal development
placenta and, 97-98

Fetoplacental unit
maternal metabolism and, 109-12

Fiber
copper absorption and, 263
copper bioavailability and, 216-17
trace mineral utilization and, 214
zinc absorption and, 221

Fire retardants
goitrogenic effect of, 388

Folic acid
placental transport of, 105

Food
magical thinking about, 37-38
sources of iodine in, 394-98

Food additives
consumer concern with, 45

Food consumption
in United States, 413-27

Food cultism
definition of, 36-37

Food faddism
coping with, 48-49
current, 45-48
definition of, 36
harm done by, 41-45
persistence of, 38-41

Food processing
pyridine nucleotide degradation and, 290

Food quackery
definition of, 37

Food restriction
metallothionein induction and, 272

Food symbolism, 40-41

Fracture patients
plasma amino acids in, 443

Fructose 1,6-bisphosphatase
zinc and, 271

Fungicides
goitrogenic effect of, 389

Furosemide
renal failure and, 144

G

Gas chromatography
biological tracer studies and, 315-16

Gases
placental transport of, 99-100

Gastrointestinal function
noninvasive evaluations of, 317-18

Geological sediments
goitrogenic effect of, 386

Glucagon
copper incorporation into ceruloplasmin and, 276
hepatic glucose production and, 272-73
injury and sepsis and, 441
protein-calorie malnutrition and, 202

Glucocorticoids
ceruloplasmin secretion and, 276
copper transport and, 267
injury and sepsis and, 441
metallothionein induction and, 272
protein synthesis in liver and, 445

Gluconeogenesis
starvation and, 437-39

Glucose
nitrogen sparing and, 456
placental transport of, 100-1

Glucose tolerance factor
insulin potentiation and, 299

Glutamate
placental transport of, 103

Glutamic acid
placental transport of, 103

Glutamic dehydrogenase
zinc deficiency and, 271

Glutamine
placental transport of, 103

Glutathione
compounds detoxified by, 64-67
zinc absorption and, 265

Glutathione metabolism
selenium and, 54-57

Glutathione peroxidase
physiological function of, 55
selenium and, 54-56
selenium intake and, 219

Glutathione S-transferases
compounds detoxified by, 64-67
selenium and, 56

Glycine
zinc absorption and, 266

Glycohydrolases
pyridine nucleotide degradation and, 290

Glycylhistidyllysine
copper transport and, 268

Goiter
see *Endemic goiter*

Goitrogens
excess dietary iodine as, 390-98
natural, 380-86
elimination of, 404
synthetic, 386-90
elimination of, 404

Gonadotropins
malnutrition and, 195-96

Graves' disease
iodine content of thyroid in, 393

Growth hormone
protein-calorie malnutrition and, 188-90

H

Hashimoto's thyroiditis
goiter development and, 380
iodine intake and, 398

HDL
see *High-density lipoproteins*

Health care delivers
food faddism and, 49

Health education
food faddism and, 49

Healthologists
food faddism promotion and, 47

Health practitioners
food faddism promotion and, 47

Health publications
food faddism promotion and, 47-48

HeLa cells
protein synthesis inhibition in, 297

Heme iron
bioavailability of, 223

Heme metabolism
selenium deficiency and, 60

Hemodialysis
serum carnitine concentrations and, 247-48
see also *Dialysis*

Herbal therapy
dangers of, 42-43

High-density lipoproteins
reverse cholesterol transport and, 87-91

Histidine
copper absorption and, 262
copper transport and, 267-68
renal failure and, 132
zinc absorption and, 265

Histidine-rich glycoprotein
copper transport and, 268

Homeopaths
food faddism promotion and, 47

Host defenses
zinc metalloenzymes and, 271

Hydrochlorothiazide
renal failure and, 144

Hydroperoxide metabolism
glutathione peroxidase and, 55

Hydroxyquinolines
acrodermatitis enteropathica and, 279

Hyperbetaisotesterolemia
acylcholesterol acyl transferase specificity and, 76

Hypercholesterolemia
bile acid synthesis and, 79
cholesterol absorption and, 74-75
dietary zinc and, 215

Hyperglucagonemia
renal failure and, 130

Hyperglycemia
alanine synthesis and, 437

Hyperkalemia
renal failure and, 130, 144

Hyperlipidemia
carnitine deficiency and, 137

Hyperlipoproteinemia
carnitine and, 247

Hypermagnesemia
chronic renal failure and, 142

Hyperparathyroidism
chronic renal failure and, 139

Hyperphosphatemia
chronic renal failure and, 130, 139-42

Hyperthyroidism
endemic goiter and, 345
tissue carnitine concentrations in, 241-42

Hypertriglyceridemia
peritoneal dialysis and, 136-37

Hypoalbuminemia
growth hormone levels and, 189-90

Hypocalcemia
chronic renal failure and, 139-41

Hypocomplementic vasculitis
iodine intake and, 398

Hypoglycemia
Jamaican vomiting sickness and, 246

Hypogonadism
zinc deficiency and, 220

Hyponatremia
renal failure and, 144

Hypothalamo-pituitary-gonadal axis
protein-calorie malnutrition and, 193-96

Hypothalamo-pituitary-thyroid axis

protein-calorie malnutrition and, 191-92

Hypothyroidism
endemic goiter and, 346
iodine content of thyroid in, 393

tissue carnitine concentrations in, 241

I

Immunocompetence
copper-containing enzymes and, 270

India
endemic goiter in, 363-64

Infant diet
carnitine in, 248-49

Infection
metallothionein induction and, 272
plasma amino acids in, 443

Inflammatory response
copper-containing enzymes and, 270

Inorganic element metabolism
biological tracer studies of, 325-27

Insecticides
goitrogenic effect of, 389

Insulin
amino acid mobilization and, 438
chromium and, 215
injury and sepsis and, 441
placental transport of glucose and, 100-1
protein-calorie malnutrition and, 200-2

Insulin secretion
pregnancy and, 110-11

Iodide transport
thyroid hormone production and, 370

Iodine
nutritional need of, 370-71
transplantable thyroid carcinoma and, 374-77

Iodine deficiency
endemic goiter and, 371-73

Iodipamide hepatotoxicity
selenium deficiency and, 64

Iridologists
food faddism promotion and, 47

Iron
bioavailability of, 213, 223-26
placental transport of, 107-8

Iron mobilization
ceruloplasmin and, 270

Ischemic heart disease
diet and, 165-68
diet modification and, 168-76
serum cholesterol and, 157-59

Isoproterenol
NAD-dependent ADP-ribosyl transferase and, 298

Isotope ratio mass spectrometry
biological tracer studies and, 314-15

J

Jamaican vomiting sickness
carnitine and, 246

Japan
coastal goiter in, 390-91

K

Keshan disease
selenium deficiency and, 66

Ketogenesis
carnitine and, 242

Kidney disease
carnitine and, 247-48

Kwashiorkor
adrenocortical activity in, 198
plasma renin bioactivity in, 199
plasma thyroxine levels and, 192

Kynurenine-3-hydroxyanthranilate pathway
biosynthesis of niacin and, 292

L

Lactation
placental lactogen and, 109

Lactic dehydrogenase
zinc deficiency and, 271

Laetrile
fatal poisonings and, 42

Laron dwarfism
growth hormone levels and, 191

Law
food faddism and, 49

LDL
see Low-density lipoproteins

Lebanon
endemic goiter in, 359-60

Lipids
placental transport of, 103-4

Lipolysis
placental lactogen and, 111

Liver
cholesterol metabolism and, 78-81

protein synthesis and degradation in, 451

Liver disease
carnitine and, 246-47

Low-density lipoproteins
dietary cholesterol and, 84-87

Lung cancer
megavitamin C therapy and, 43

Lysine
carnitine synthesis and, 235
zinc absorption and, 266

Lysine deficiency
tissue carnitine concentrations and, 239

Lysocitin
cholesterol absorption and, 72

Lysyl oxidase
copper deficiency and, 270

M

Magnesium
chronic renal failure and, 142
placental transport of, 107

Malabsorption syndromes
assessment of, 317-18

Malic dehydrogenase
zinc deficiency and, 271

Malnutrition
delayed puberty and, 193-94
diagnosis and, 126, 138
food faddism and, 43
placental structure and function and, 112-13
tissue carnitine concentrations and, 239
see also Protein-calorie malnutrition

Manganese
bioavailability of, 218

Maple syrup urine disease
glucose homeostasis and, 320

Marasmus
adrenocortical activity in, 198
plasma renin bioactivity in, 199
plasma thyroxine levels and, 192

Mass spectrometry
biological tracer studies and, 315-16

Megavitamin A therapy
pregnancy and, 42

Megavitamin C therapy
lung cancer and, 43

Menkes's syndrome
copper deficiency and, 278-79

Mercury toxicity
selenium and, 62, 65

Metabolic end products
biological tracer studies and, 317-19

Metalloenzymes
copper, 269-70
copper transport and, 267-68
zinc, 270-72

Metallothionein
copper absorption and, 264
copper and zinc metabolism and, 272-75

Methionine
carnitine synthesis and, 235
zinc absorption and, 265

Methionine deficiency
selenomethionine biopotency and, 219

3-Methylcholanthrene
cytochrome p-450 and, 58

Methylmercury toxicity
selenium and, 62, 65

Mexico
endemic goiter in, 357

Mineral supplementation
promotion of
pharmaceutical companies and, 46-47

Molybdenum
copper absorption and, 263

Monoamine oxidase
copper and, 270

Monocrotaline metabolism
selenium deficiency and, 59

Monoglycerides
cholesterol absorption and, 72

Muscle
protein synthesis and degradation in, 451-52

Muscle disease
carnitine deficiency and, 244

Muscular dystrophy
carnitine deficiency and, 244
see also Duchenne muscular dystrophy

Mustard
goitrogenic effect of, 383-84

N

NAD
non-redox functions of, 289

NAD glycohydrolase
nicotinamide formation and, 290

pyridine nucleotide fission
and, 296-98

Nutropaths
food faddism promotion and, 47

Nepal
endemic goiter in, 364

Neurocuprein
enzymatic activity of, 270

New Guinea
endemic goiter in, 364-67

Niacin, 289-302
biosynthesis of, 292
carnitine synthesis and, 236
excretory products of, 298-99
metabolism of, 293-98
physiological and pharmacological effects of, 299-302
transport among organs, 293

Niacinamide
excretory products of, 298-99

Nicotinol
serum cholesterol levels and, 300

Nicotinamide
formation of, 290

Nicotinic acid
absorption of, 291-92

Nitrofurantoin
selenium deficiency and, 65

Nitrogen balance
physical injury and, 433-34

Nitrogen excretion
energy expenditure and, 436-37

Nontoxic nodule goiter
iodine content of thyroid in, 393

Nutrition
protein metabolism and, 453-58
renal failure and, 125-46
whole body protein turnover and, 447-48

Nutrition education
food faddism and, 39-40

O

Obesity
glucose substrate oxidation and, 317

Oral contraceptives
copper absorption and, 217-18

Organochlorine insecticides
goitrogenic effect of, 389

Osteomalacia
bone aluminum and, 140
dialysis and, 140

Oxygen
placental transport of, 99-100

P

Pakistan
endemic goiter in, 360-63

Pancreas
zinc absorption and, 266-67

Pancreatic cholesterol esterase
cholesterol absorption and, 72

Parachloromercuribenzoate
carnitine uptake and, 238

Paraquat toxicity
selenium deficiency and, 64-65

Parenteral alimentation
carnitine in, 250
renal failure and, 137-38

Peanut
goitrogenic effect of, 385-86

Pellagra
niacin and, 300-1

D-Penicillamine
Wilson's disease and, 278

Peritoneal dialysis
hypertriglyceridemia and, 136-37

Peru
endemic goiter in, 358

Pharmaceutical companies
vitamin and mineral supplement promotion by, 46-47

Phenobarbital
cytochrome p-450 and, 58

Phenylalanine
biological tracer studies of, 321

Phosphate
placental transport of, 107

Phosphate salts
nonheme iron absorption and, 225

Phosphorus
selenium absorption and, 220

Physical injury
plasma amino acids in, 442-45
protein metabolism and, 439-42
whole body protein turnover and, 448-49

Phytates
copper absorption and, 263

Phytic acid
trace mineral utilization and, 214
zinc absorption and, 221

Picolinate
zinc absorption and, 265

Picolinic acid
acrodermatitis enteropathica and, 279
zinc absorption and, 265

Pink copper protein
enzymatic activity of, 270

Pinon
goitrogenic effect of, 386

Pituitary-adrenal axis
protein-calorie malnutrition and, 197-98

Placenta
hormone secretion by, 109-12
maternal nutrition and, 112-15
nutrient transport by, 99-108

Placental hormones
maternal nutrition and, 113-14

Placental lactogen
placental progesterone production and, 109-10

Plant sterols
absorption of, 75-76

Polychlorinated biphenyls
goitrogenic effect of, 387-88

selenium requirements and, 58

Porphyrin iron
cellular uptake of, 223

Potassium
placental transport of, 107

Potassium balance
chronic renal failure and, 144

Pregnancy
megavitamin A therapy and, 42
placental hormones and, 110-12

Prenisolone
carnitine uptake and, 237-38

Progesterone
placental production of, 109

Prolactin
placental secretion of, 109
protein-calorie malnutrition and, 196-97

Protein
energy expenditure and, 436-37
selenium absorption and, 220

Protein-bound iodine
cretinism and, 362

Protein-calorie malnutrition, 187-203
adrenal cortex and, 199
antidiuretic hormone and, 200
catecholamines and, 199
glucagon and, 202
growth hormone and, 188-90
hypothalamo-pituitary-gonadal axis and, 193-96
hypothalamo-pituitary-thyroid axis and, 191-92
insulin and, 200-2
pituitary-adrenal axis and, 197-98
prolactin and, 196-97
somatomedin and, 190-91
somatostatin and, 202
thyroid function and, 192-93

Protein degradation, 445-49
rates in organs and cells, 450-53

Protein loss
body composition and, 434-36

Protein metabolism, 433-59
nutrition and, 453-58
physical injury and, 439-42
pregnancy and, 111
starvation and, 437-39

Protein requirements
dialysis and, 130-31

Protein synthesis, 445-49
biological tracer studies of, 322-23
rates in organs and cells, 450-53

Protein turnover
assessment of, 318-19
whole body, 446-47
normal values of, 447
nutrition and exercise and, 447-48
physical injury and, 448-49

Proteinuria
renal failure and, 130

Pyramid sales schemes
food faddism and, 45-46

Pyridine nucleotides
absorption of, 291-92
coenzyme functions of, 289
digestion of, 290-91
fission of, 296-98
formation of, 294-96

Pyridoxine
renal failure therapy and, 145

Pyrophosphatas
pyridine nucleotide degradation and, 290

Q

Quinolinolate
biosynthesis of niacin and, 292

R

Rapeseed
goitrogenic effect of, 383-84

Red blood cell hemolysis
selenium and, 54

Redox-cycling compounds
selenium deficiency and, 64-65

Reflexologists
food faddism promotion and, 47

Renal failure
divalent ion metabolism and, 139-42

electrolyte balance abnormalities and, 142-44
fat metabolism and, 136-37
growth hormone levels and, 191
nitrogen retention and, 127-30
nitrogen-free essential amino acid analogs and, 133-36
nutrition and, 125-46
parenteral and enteral alimentation and, 137-38

Renal insufficiency
carnitine and, 247-48

Renal osteodystrophy
chronic renal failure and, 139-42

Retinol
placental transport of, 105

Reye's syndrome
carnitine and, 246

Riboflavin
placental transport of, 105

S

Schistosomiasis
tissue carnitine concentrations and, 239

Selenium
bioavailability of, 218-20
biological activity of, 53-67
carcinogenesis and, 65-66
effects in man, 66-67
effects in whole animals, 63-64
glutathione-dependent enzymes and, 54-57
glutathione metabolism and, 54-57
mercury and, 62
vitamin E and, 61-62
xenobiotic metabolism and, 57-61

Selenium deficiency
effects of, 63-64
glutathione S-transferase activity and, 55

Selenomethionine biopotency
methionine deficiency and, 219

Serum cholesterol
diet and, 159-65
ischemic heart disease and, 157-59

Sex hormones
ceruloplasmin secretion and, 276

Sexual stimulants
historical, 2-14

Skin integrity
zinc metalloenzymes and, 271

Socioeconomic status
 endemic goiter and, 368

Sodium
 placental transport of, 107

Sodium balance
 chronic renal failure and, 143-44

Somatomedin
 protein-calorie malnutrition and, 190-91

Somatotropin
 protein-calorie malnutrition and, 202

Southeast Asia
 endemic goiter in, 363

Soybean
 goitrogenic effect of, 384-85

Spermatogenesis
 selenium and, 62

Spermatozoan metabolism
 carnitine and, 241

Sporadic goiter
 definition of, 371

Starvation
 food faddism and, 42
 protein metabolism in, 437-39

Steroids
 colon cancer and, 76

Stress
 metallothionein induction and, 272

Sulfonamides
 goitrogenic effect of, 389

Sulfur
 copper absorption and, 263

Superoxide dismutase
 copper and, 270

Superoxide radicals
 ceruloplasmin and, 270

T

Tannins
 nonheme iron absorption and, 224

Taurine
 placental transport of, 103

Tetracyclines
 goitrogenic effect of, 389-90

Thermogenesis
 carnitine and, 242

Thiocyanate
 endemic cretinism and, 379

Thyroid
 enlargement classification of, 371
 iodine and, 390
 iodine content of, 393
 normal, 370
 protein-calorie malnutrition and, 192-93

Thyroid carcinoma
 endemic goiter and, 346, 350-51
 experimental goiter and, 373-77

Thyroid hormone
 goiter development and, 380
 production of, 370

Thyroid-stimulating hormone
 anorexia nervosa and, 192

Thyrotropin
 thyroid carcinoma and, 374

Thyroxine
 iodine-deficient goiter and, 377

Thyroxine metabolism
 protein-calorie malnutrition and, 192-93

Tissue growth
 zinc metalloenzymes and, 271

Toxic nodular goiter
 endemic goiter and, 350

Trace minerals
 bioavailability of, 213-26
 renal failure and, 145

Transferrin
 zinc transport and, 269

Trimethyllysine
 carnitine synthesis and, 235-37

Tryptophan
 biosynthesis of niacin and, 292
 zinc absorption and, 265

Tryptophan-2,3-dioxogenase
 copper and, 270

Tyrosine
 biological tracer studies of, 321

U

UDP glucuronyl transferase
 activity

 selenium deficiency and, 61

United States
 food consumption in, 413-27
 goiter prevalence in, 391

Urea
 renal failure and, 127-29

Uremia
 carbohydrate intolerance and, 136

Uremic acidosis
 protein restriction and, 142-43

Uric acid
 renal failure and, 129-30

Uteroplacental unit
 blood flow to, 99-100

V

Vegetarian diet
 carnitine in, 249

Very-low-density lipoproteins
 cholesterol metabolism and, 82-84

Vinyl-thiooxazolidone
 endemic cretinism and, 379

Vitamin A
 placental transport of, 105
 renal failure therapy and, 145

Vitamin A deficiency
 placental structure and function and, 113

Vitamin B₁₂
 placental transport of, 105

Vitamin B₆
 carnitine synthesis and, 236
 placental transport of, 105

Vitamin B₆ deficiency
 selenomethionine biopotency and, 219

Vitamin C
 renal failure therapy and, 145

Vitamin D
 chronic renal failure and, 141-42
 placental calcium transport and, 106

Vitamin D deficiency
 chronic renal failure and, 139-42

Vitamin deficiency disorders
 food faddism and, 43

Vitamin E
 mythical properties of, 38-39
 placental transport of, 105
 selenium and, 61-62

Vitamin K
 placental transport of, 105

Vitamins
 placental transport of, 104-5
 renal failure therapy and, 145

Vitamin supplementation
 promotion of
 pharmaceutical companies and, 46-47

VLDL
 see Very-low-density lipoproteins

W

Walnut
 goitrogenic effect of, 385

Water
 placental transport of, 99-100

Water balance
 chronic renal failure and, 144

Wheat bran
nonheme iron absorption and,
224

Wilson's disease
copper overaccumulation and,
277-78

extrahepatic tissue copper up-
take in, 268

X

Xenobiotic metabolism
selenium and, 57-61

Y

Yugoslavia
endemic goiter in, 343-51

Z

Zaire
endemic goiter in, 364-65

Zinc
absorption of, 264-67

bioavailability of, 220-23

copper absorption and, 262

metallothionein induction and,
272

transport of, 268-69

placental, 108

uptake and efflux of, 275-
76

Zinc metabolism
diseases of, 277-80

renal failure and, 145

Zinc metalloenzymes, 270-72